OCELE PRE PRÁCU ZA STUDENA

Dostupné výrobné profily

Tyčové polotovary* | Plechy

*) Presented data refer exclusivly to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Popis produktu

BÖHLER K100 - Štandardná ledeburitická 12 %-ná chrómová oceľ odolávajúca rozmerovým zmenám.

Spôsob výroby

Konvenčná výroba

Vlastnosti

- Odolnosť proti opotrebovaniu : dobré

Aplikácia

- Strojové nože (pre výrobcov)
- Strihanie / Dierovanie / Lisovanie / Presné strihanie
- Valcovanie profilov
- Valcovanie
- Výroba normalizovaných dielov (strižníky, platne, kolíky, razníky)
- Oteruvzdorné diely
- Tvárnenie za studena
- Komponenty pre recykláciu
- Diely pre všeobecné strojárstvo

Technické údaje

Označenie materiálu	
1.2080	SEL
~T30403	UNS
X210Cr12	EN
~D3	AISI
~SKD1	JIS

Normy	
4957	EN ISO

Chemické zloženie

C	Si	Mn	Cr
2,00	0,25	0,35	11,50

Porovnanie vlastnosti materiálu

	Odolnosť proti tlakovému zaťaženiu	Rozmerová stabilita počas tepelného spracovania	Húževnatosť	Odolnosť proti abrazívnemu opotrebovaniu	Odolnosť proti adhezívnemu opotrebovaniu
BÖHLER K100	★★	★★	★	★★★	★★
BÖHLER K105	★★	★★	★	★★	★★
BÖHLER K107	★★	★★	★	★★★	★★
BÖHLER K110	★★	★★★	★	★★★	★★
BÖHLER K190 MICROCLEAN	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K294 MICROCLEAN	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K340 ISODUR	★★★	★★★★	★★★	★★★	★★★★
BÖHLER K340 ECOSTAR	★★★	★★★	★★	★★	★★
BÖHLER K346	★★★	★★★	★★★	★★★★	★★
BÖHLER K353	★★	★★★	★★	★★	★★
BÖHLER K360 ISODUR	★★★	★★★★	★★★	★★★★	★★★★
BÖHLER K390 MICROCLEAN	★★★★★	★★★★★	★★★★	★★★★★	★★★★★
BÖHLER K490 MICROCLEAN	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K497 MICROCLEAN	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K888 MATRIX	★★★★	★★★★★	★★★★★	★★	★★
BÖHLER K890 MICROCLEAN	★★★★	★★★★★	★★★★★	★★★	★★★

Stav pri dodaní

Žíhaný

Tvrdosť (HB)	max. 248

Air Quenched

Tepelné spracovanie

Žíhanie

Teplota	800 až 850 °C	Slow controlled cooling in furnace at a rate of 50 to 68°F (10 to 20°C/hr) down to approx. (600°C), further cooling in air.

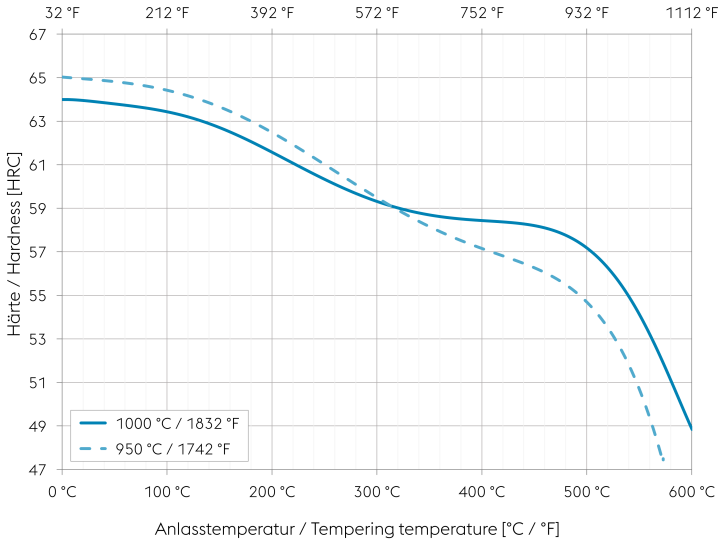
Žíhanie na odstránenie pnutí

Teplota	650 °C	Slow cooling in furnace; intended to relieve stresses set up by extensive machining, or in complex shapes. After through heating, hold in neutral atmosphere for 1-2 hours.

Kalenie a popúšťanie

Teplota	940 až 970 °C	Oil, salt bath 428 to 482°F or 932 to 1022°F (220 to 250°C or 500 to 550°C), compressed or still air if thickness does not exceed 0,98 inch (25 mm) and if hardening temperature is on the upper side of the range, gas Holding time after temperature equalization: 15 to 30 minutes. After hardening, tempering to the desired working hardness, see tempering chart.

Tempering chart



Tempering:

Specimen size: square 0,787 inch (20 mm)

Slow heating to tempering temperature immediately after hardening.

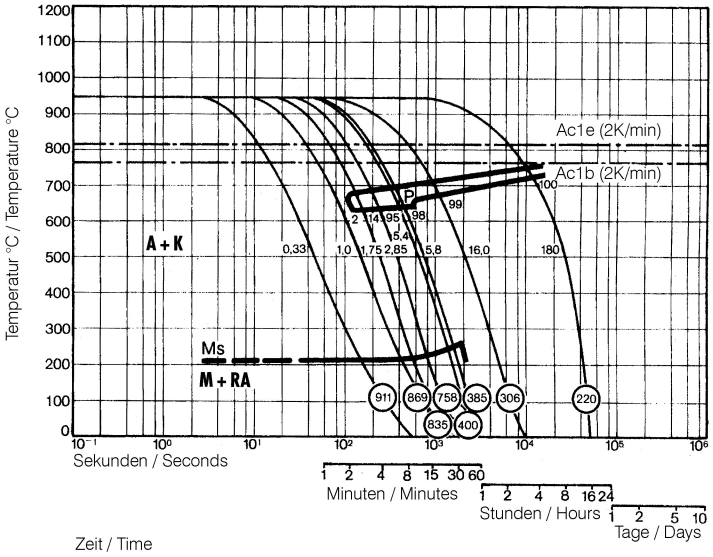
Time in furnace 1 hour for each 0,787 inch (20 mm) of workpiece thickness but at least 2 hours/cooling in air.

Slow cooling to room temperature after each tempering step is recommended.

Please refer to the tempering chart for guide values for the hardness achievable after tempering.

Tempering for stress relieving 86 to 122 °F (30 to 50 °C) below the highest tempering temperature.

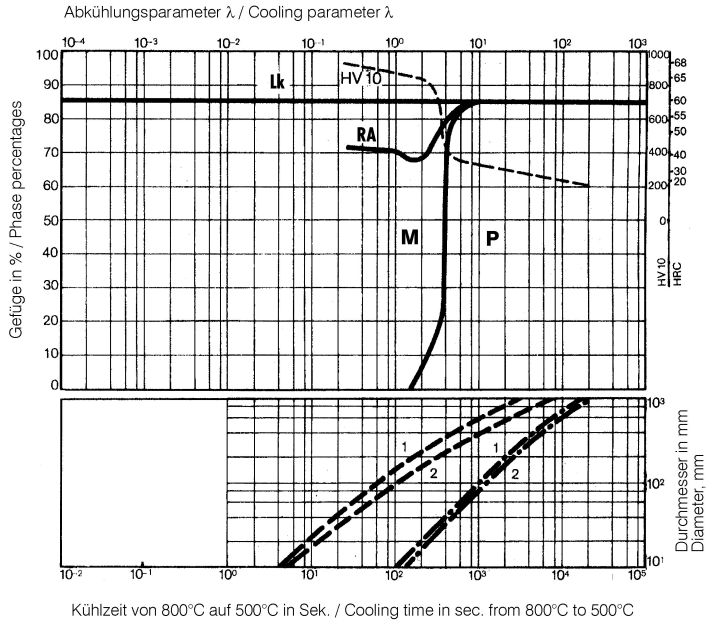
Continuous cooling CCT curves



Austenitising temperature: 1742°F (950°C)
Holding time: 30 minutes

O Vickers hardness
2...100 phase percentages
0.33...180 cooling parameter, i.e. duration of cooling from 1472 to 932°F (800 to 500°C) in s x 10^{-2}
35,6°F/min (2K/min)... cooling rate in K/min in the 1472 to 932°F (800 to 500°C) range

Quantitative phase diagram

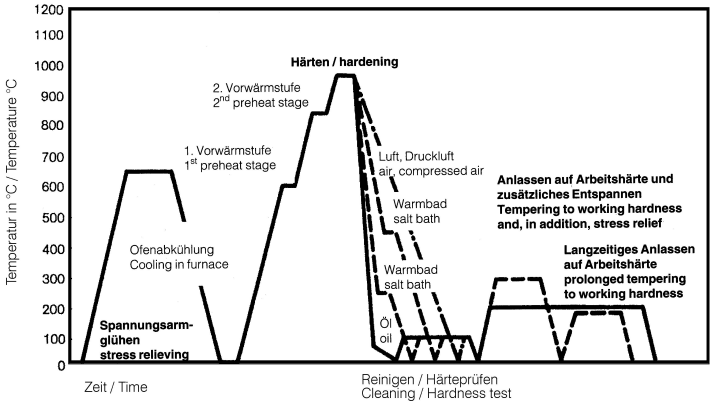


Lk... Ledeburite carbide
RA... Residual austenite
A... Austenite
M... Martensite
P... Perlite
K... Carbide

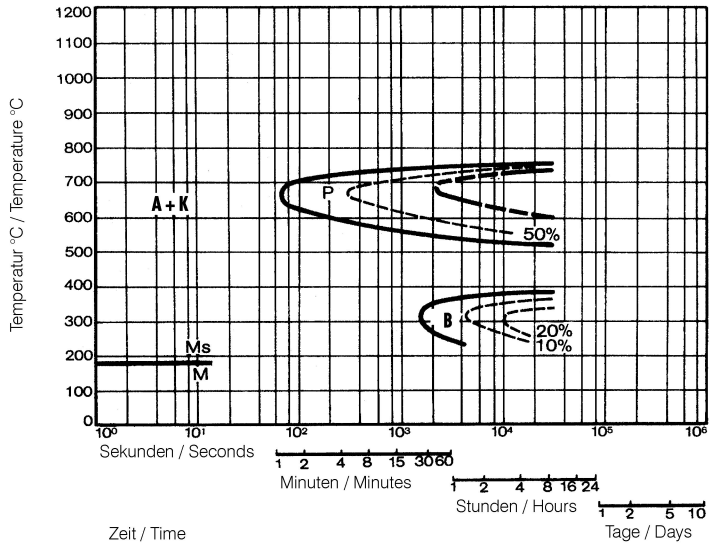
- - - - - - Oil cooling
- • - Air cooling

1... Edge or face
2... Core

Heat treatment sequence

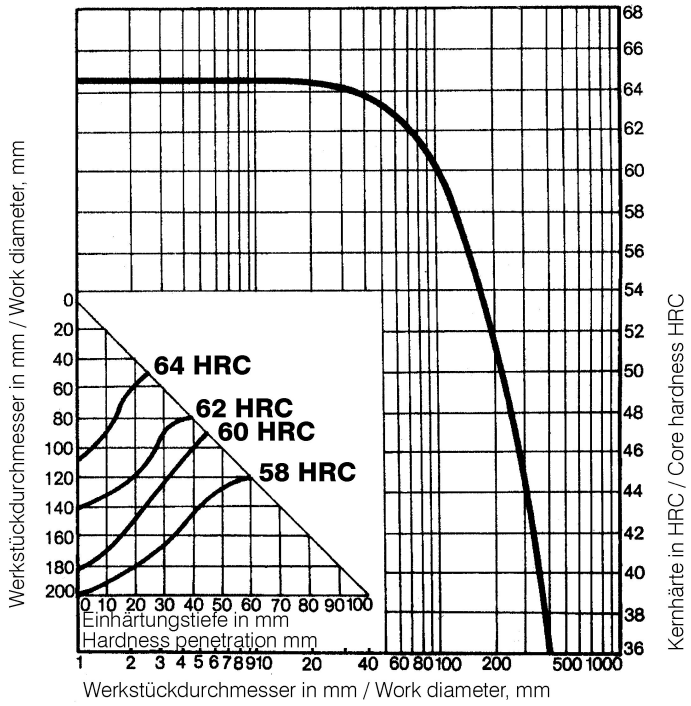


Isothermal TTT curves



Austenitising temperature: 1742°F (950°C)
Holding time: 30 minutes

Influence of work diameter on core hardness and hardness penetration



Hardening temperature: 1742°F (950°C)
Quenchant: Oil

Fyzikálne vlastnosti

Teplota (°C)	20
Hustota (kg/dm^3)	7,7
Tepelná vodivosť (W/(m.K))	20
Merná tepelná kapacita (kJ/kg K)	0,46
Merný elektrický odpor (Ohm.mm^2/m)	0,65
Modul pružnosti (10^{3}N/mm^2)	210

Tepelná rozťažnosť

Teplota (°C)	100	200	300	400	500	600
Tepelná rozťažnosť (10^{-6} m/(m.K))	10,5	11	11	11,5	12	12

Long Products: For additional specifications and technical requirements, please contact our regional voestalpine BÖHLER sales companies.

Sheet & Plates: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact voestalpine BÖHLER Bleche GmbH & Co KG.

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voestalpine
ONE STEP AHEAD.